~~SECRET~~

File A14

25X1A

To: [redacted] - WRSP(3)

August 23, 1957

From: R-W

Info: Headquarters; WRSP(2); WRSP(1)

Subject: Reply to Field Reports of 17 June 1957 and 15 July 1957

The following relates to items listed in the field reports of 17 June 1957 and 15 July 1957 which have not already been answered by Paul Albro.

1. Apparent motorboating in the r-f section, as described, has not been experienced at the plant. In regard to the remedy described, of shorting the artificial line, it has been found that a short in one position of the line can seriously affect the uniformity of response in other receiver bands, hence, generally cannot be done. Transmission line coils are normally trimmed at the factory. A possible explanation might be the lack of good contact at some connector.

2. During the development of the system, bypassing of supply lines was rather thoroughly investigated, and the bypassing which is used at present represents the arrangement which has been found to be most effective. We, of course, would be interested in hearing of results which indicate the usefulness of modification.

17. The counter reset button does not have the importance it originally had, hence probably need not be used.

18. Manufacturer has been informed regarding alignment of retaining screw on preamp.

24. Tubes should be a 12AT7, however the choice is not critical.

25. We are following-up your suggested modification to the input circuit to the control-gate flip-flop in the test set.

~~SECRET~~

Subject: Reply to Field Reports of 17 June 1957 and 15 July 1957

The following relates to your field report of 15 July 1957.

1. In the tuning procedure for the 30 mc i-f, the 3 db points refer to 3 db from maximum in the case of a flat response, or 3 db down from the mean value of response in the center of the passband where ripple occurs in the response. Because over-all system response is determined by the adjustment of several tuned circuits, the misadjustment of one particular transformer does not normally render the over-all response unsatisfactory.

2. Will forward 3d lo test jig information.

5. Your comments in regard to the method of timing in the over-all systems requires a rather involved reply, but generally, they may be answered by the fact that the customer desires to perform some very specialized, and rather delicate, signal analysis functions. For example, the attempt was to be made to time related events which were recorded on System One and System Three simultaneously to within 0.1 seconds. Only the analyst can answer the question as to the necessity for such accuracies, and I believe that we can only attempt to provide to the best of our ability the requested performance. Admittedly, this has resulted in a deplorable degree of complexity.

6. The encapsulated assemblies are cured at a temperature of 250°F for three hours. Components are selected to withstand this temperature, and tests are always made on encapsulated assemblies after curing.

7. Z701-1 through Z701-4 are identical.

8. Differences in receiver operation on the bench and when installed may be due to misconnection caused by stressing of the assembly. This is being remedied by improved solder joints, using a new type of eyelet, and improved connectors. However, this will not remedy the problem in existing equipment, hence, resort will have to be made to careful trouble-shooting.

The thermostat should be set for a temperature of 64° to 70°C.

9. Field mod kits are being provided which contain the new top shields with holes.

10. The unused coaxial fittings on the 2d lo board are used merely to hold in place the coaxial cable mounted on the main plate. This coaxial cable is used with the 04A board (for fixed channel operation), and serves to control the reference crystal on the 04A board.

Subject: Reply to Field Reports of 17 June 1957 and 15 July 1957

12. In regard to lo stability, the best solution seems to be one of proper tuning. A drift of several kc should not be considered excessive.

13. Your work with the superregenerative receiver is very interesting. As to the reason why a regenerative type of receiver was not used in System Three, generally it is for the same reasons that such a type of receiver is not used in the ARC34 or other military and commercial VHF or UHF receiver.

14. An ingenious set of tools. We have looked for a large diameter handled Allen wrench but have not been able to find one.

15. Do not quite fully understand your comment in regard to "first pulse widening", but believe you refer to relatively slow decay of the first of the pulse pair constituting the marker pulse. This slow decay is not believed to cause any system malfunction, and does result in circuit simplicity in the 05 assembly.

25X1A

[redacted]